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This article focuses on the problem of assessing the environmental sustainability of energy projects. For this purpose an original model, which is based on various indicators that measure the environmental sustainability of energy projects, has been developed. This model, so called index of environmental sustainability of energy projects (IESEP), can be used in scenario comparison, while measuring the effectiveness of the proposed alternatives. Finally, an example of how to use this model is provided by analyzing alternatives to ameliorate the environmental sustainability of a hydroelectric project. In doing so, it is possible to show the usefulness of this model when...

Research highlights: Environmental sustainability (ES) of energy projects is assessed along its lifetime. Quantitative evaluation model for ES of energy projects is provided. A compound index called IESEP was formed from energy project indicators. A hydropower generation case study is presented.

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